

24MCAE202: ADVANCED JAVA PROGRAMMING

Hours/Week: 3
Credits: 3

I.A. Marks: 30
Exam. Marks: 70

Course Learning Objectives:

- Explore the fundamentals of exception handling in Java.
- Create and use exception handling through classes and objects.
- Understand the concept of Threads in Java.
- To learn event handling in Swings, JFrames and Components.

Course Outcomes: After completing the course, the students will be able to,

- Use the Java language for writing well-organized, complex computer programs with both command line and graphical user interfaces.
- Develop web application using Java Servlet and Java Server Pages technology.
- Learn how to work with ODBC, JSP and Servlets.
- Develop sophisticated, interactive user interfaces using the Java Swing class and appropriate layout managers.
- Understand advanced topics including multithreading, internet networking.
- Gathering the JDBC database connectivity, Java beans importance and services.
- Come across the applications of java events and their approaches.

UNIT-I

9 Hrs.

Review on Basics of Java Technology, Exception and Multithreads: Exception-type, Uncaught Exception, Using try-catch, throw, throws, finally, Throwable class and object, Exception classes, Create own exception subclass. Creating multiple threads, isAlive(), join(), Thread priorities, synchronization, - Deadlock, wait(), notify(), notify All() methods, Inter-Thread Communication, suspend, resume & stop the threads. Swing: Introduction to Swing, Event Handling, Component Organizers: JApplet, Handling Swing Controls like Icons JFrames, Lists, Tables, Trees, Text Components, Progress Indicators.

UNIT-II

9 Hrs.

JDBC: Presentation to JDBC CONNECTION settings – The Concept of JDBC – JDBC Driver Types – JDBC Packages – A Brief Overview of the JDBC Process – Database Connection – Associating the JDBC/ODBC Bridge with the Database – Statement Objects – Result Set, metadata, Transaction. JSP: Introduction, disadvantages, JSP v/s Servlets, Lifecycle of JSP, Comments, JSP documents, JSP elements, Action elements, implicit objects, scope, character quoting conventions, unified expression language.

UNIT-III

9 Hrs.

Enterprise Java Bean: Preparing a Class to be a JavaBean, Creating a JavaBean, JavaBean Properties, Types of beans, Stateful Session bean, Stateless Session bean, Entity bean. Servlet API and Lifecycle: Background, The Life Cycle of a Servlet & The JSDK-A Simple Servlet – The Servlet API -RolePlay-Servlet Concept – The javax.servlet Package – Reading Servlet Parameters, The javax.servlet.http Package – Handling HTTP Request and Responses – Using Cookies – Session Tracking.

UNIT-IV

9 Hrs.

HIBERNATE: Introduction, Writing the application, application development approach, creating database and tables in MySQL, creating a web application, Adding the required library files, creating a java bean class, creating hibernate configuration and mapping file, adding a mapping resource, creating JSPs. WEB Services: SOAP, Building a

web services using JAX-WS, Building web service. JAVAMAIL: Mail Protocols, Components of the Javamail API, JAVAMAIL API, Starting with API.

REFERENCE BOOKS:

1. Naughton and H.Schildt, Java 2-The complete reference Fifth Edition McGraw Hill, (2007).
2. Sharanam Shah, Vaishali Shah, Java EE 6 for Beginners, SPD
3. Herbert Schildt, Java Complete Reference, Seventh Edition, TMH. (Unit I)
4. Shah, Java EE Project using EJB 3, JPA and struts 2 for beginners, SPD
5. C Xavier, Java Programming A practical Approach, McGraw Hill

